TIKHANOVSKIY, P. G.

Hydraulics

Time of flow of thaw water from slopes. Met. i gidrol, no. 5, 1949.

9. Monthly List of Russian Accessions, Library of Congress, October 1952 Uncl.

TIKHANOVSKIY, P.G.

Calculation of the norm of maximum runoff of snow waters from small drainage areas. Meteor. i gidrol. no.11:35-36 N '64.

(MIRA 1':12)

1. Voronezhskiy sel'skokhozyaystvennyy institut.

L 13292-66 EWT(m)/EWP(j) RM

ACC NR: AP6000325 (A) SOURCE CODE: UR/0286/65/000/021/0012/0012

INVENTOR: Volkova, L. I.; Zaitova, A. Ya.; Ioakimis, A. A.; Mochal'nikova, T. P.; Nazarova, L. Yu.; Nazarov, V. I.; Pryakhina, M. S.; Petrov, V. N.; Rachkovskiy, E. E.; Savel'yev, A. P.; Syrova, A. A.; Tikhanovskaya, S. G.

32
B

ORG: none

TITLE: A method for producing normal butanol by synthesis from ethyl alcohol. Class 12, No. 175929 [announced by the Bashkir Scientific Research Institute for Petroleum Refining (Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 12

TOPIC TAGS: catalysis, butanol, ethyl alcohol

ABSTRACT: This Author's Certificate introduces: 1. A method for producing normal butanol by synthesis from ethyl alcohol on a catalyst. The process is done in a single stage by using a catalyst consisting of aluminum oxide, magnesium oxide, silicon oxide and a salt or oxide of an alkali metal. 2. A modification of this

Card 1/2 UDC: 66.097.3 : 547.264.07

L 13292-66

ACC NR: AP6000325 O

method in which the catalyst contains from 5 to 80 % aluminum oxide, from 95 to 10 % magnesium oxide, from 0 to 50 % silicon oxide and from 0 to 5 % of a salt or oxide of an alkali metal.

SUB CODE: 07/ SUBM DATE: 11Apr63/ ORIG REF: 000/ OTH REF: 000

jw

Card 2/2

TIKHANOVSKIY, S.V.

Utilizing new methods in plans of the State Institute for Planning Specialized Petroleum Construction. Strei.pred.neft.prom.1 no.2: 11-12 Ap '56. (MLRA 9:9)

1.Direktor instituta Gidrospetsneftestroy.
(Building)

TIKHANOVSKIY, S.V., inzh. (Leningrad)

Constructing pipelines in swampy areas. Stroi. truboprov. 5 no.3: 22-24 Mr '60. (MIRA 13:9)
(Pipelines) (Gas, Natural)

TIKHANOVSKIY, S.V., inzh. (Leningrad)

Role of new equipment in planning solutions. Stroi.truboprov. 5 no.11:7-9 N '60. (MIRA 13:11)
(Gas, Natural--Pipelines)

KONTOROVICH, S., inzh.; TIKHANOVSKIY, S., inzh.

Technology of the production of large details at the Kuznetsovskiy Housing Construction Combine. Zhil. stroi. no.9:16-19 S '60. (MIRA 13:9)
(Leningrad--Precast concrete construction)

TIHANOVSKI, S.V. (Tikhanovskiy, S.V.)

Technique of constructing gas pipes in the U.S.S.R. *Petrol si gaze* 13 no.1:12-17 Ja '62

1. Director al Institutului de stat de proiectare GHIPROSPEKTGAZ (GIPROSPEKTGAZ) si Presedinte al consiliului Asociatiei tehnico-stiintifice a industriei petroliere si a gazelor din Leningrad.

TIKHANOVSKIY, V.I.

TSEYTLIN, Ya.I., inzhener; KRYUCHKOV, T.V.; TIKHANOVSKIY, V.I., inzhener.

Investigating the seismic effect of blasting at the Tyrny Auz mine. Gor.zhur. no.9:32-37 S '57. (MLRA 10:9)

1. Proizvodstvenno-eksperimental'noye upravleniye Soyuzvzryvproma. (Tyrny Auz (Kabardia)--Blasting) (Seismic waves)

TIKHASHKOV, A., montazhnik, Geroy Sotsialisticheskogo Truda

Plus electrification... Sov. profsoiuzy 17 no.19:8-9 O '61.
(MIRA 14:9)

1. Trest "Spetsgidroenergomontazh".
(Hydroelectric power stations)

TIKHAUER, P.

Investigating helical rolling with taper grooves. Trudy LPI no.243:146-153 '65.

Determining the capacity and acting forces in helical rolling with taper grooves. Ibid.:154-156

(MIRA 18:6)

TIKHAVSKIY, I.; BARTOSH, I.

Operations of a Czechoslovakian furniture factory. Der.prom. 8 no.1:29-30 Ja '59. (MIRA 12:1)
(Czechoslovakia--Furniture industry)

CZECHOSLOVAKIA / Chemical Technology. Fats, Oils, waxes, soaps, detergents, substances, flotoreagent. H-25

Abs Jour : Ref. Zhur-Khimiya, No 12, 1958, 41162.

Author : Sodlachok, Rybin, Tikhaya.

Inst : Not given.

Title : A method for determining the peroxide number in fats. Communication II. Application of the peroxide number and certain other methods in the evaluation of the suitability of butter and fats for foods.

Orig Pub : Ceskosl. hyg. 1957, 2, No 4, 257-264

Abstract : The results of the examination of the chemical methods for evaluating the quality of fats and butter are given. The advantages are shown for using the peroxide number, colorimetric determinations with diphenyl carbazide and

Card 1/2

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CZECHOSLOVAKIA / Chemical Technology. Fats, oils, waxes, soaps, detergents, substances, flotoreagent H-24

Abs Jour : Ref. Zhur-Khimiya, No 12, 1958, 41162

Abstract : thiobarbituric acid, for determining the degree of spoilage in fats. Kreis' method is sufficient for quantitative determinations. The acid number is not suitable for evaluating fats because the results may be the same for fresh as well as rancid butter.
Communication I, see: R. Zh. Khim., 1957, 56192

Card 2/2

Tikhaya

CZECHOSLOVAKIA / Chemical Technology. Food Industry. H-28

Abs Jour : Ref Zhur - Khim., No. 12, 1958, No 41444

Author : Sedlachek, Rybin, Tikhaya
Inst : Not given
Title : Investigation of the Effect of Various Wrappings Upon the Preservation of Butter and Lard.

Orig Pub : Obaly, 1957, 3, No. 5, 132-134.

Abstract : A study was made on the changes that occurred in butter and lard when the wrapping paper was modified, i.e., parchment paper impregnated with quercetin and dihydroquercetin. The rate of rancidity of the inner layers of butter and lard was shown to be diminished by the above antioxidants.

Card 1/1

VOLOBUYEV, I.V., kand.tekhn.nauk; SEVRUK, B.A., inzh.; TIKHAYA, A.D., inzh.

Investigating causes of cracks in connecting rods and possibilities of replacing the 45 steel. Trakt. i sel'khozmash. 30 no.7:35-37 Jl '60. (MIRA 13:10)

1. Khar'kovskiy traktornyy zavod im. Ordzhonikidze i KhPI im. Lenina.

(Connecting rods)

TIKHAYA, A.D

129-58-5-15/17

Scientific-Technical Conference on Metallography and Heat Treatment, Khar'kov 1958

greater influence on the impact strength of manganese steels smelted in vacuum. For an Nb content of 0.20 to 0.48%, the impact strength at sub-zero temperatures increases. It was found by micro-structural investigation that in temper brittle steels double etching reveals the boundaries of the previous austenite grain along which carbides are distributed. In steels with a lower carbon content there are almost no carbides along the grain boundaries and an increased concentration of the solid solution is observed. In steels which are not prone to temper brittleness etching does not reveal the grain boundaries. Manganese steel additionally alloyed with Nb has a strength and a yield point which is higher than for steel without Nb.

Engineer A. D. Tikhaya read the paper "Investigation of Cast "Steel 45" with Additions of Boron for Improving the Hardenability of Driven Wheels and Backing Rolls of the Tractor DT-54". Boron was introduced in the form of ferroborol at the bottom of small ladles of 200 kg capacity and for better deoxidation an additional quantity of

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Scientific-Technical Conference on Metallography and Heat Treatment, Khar'kov

aluminium was used simultaneously with ferroborol. Introduction of boron into the steel brought about a reduction of the relative elongation and contraction of normalised steel but the strength did not change. For a boron content of 0.0086-0.0095% the impact strength is three to five times lower than for boron-free steel. The sharp drop of the impact strength, the relative elongation and contraction for boron contents exceeding 0.006 - 0.007% is due to its influence on the grain boundaries of the primary crystallisation of the steel. It was established that the presence of boron up to 0.002% increases only insignificantly the hardenability; boron contents of 0.0035-0.005% increase appreciably the hardenability, whilst introducing an additional proportion of aluminium at the bottom of the ladle for deoxidation of the metal has practically no influence on the depth of hardening of the steel with boron. Backing rolls of the driven wheels produced from a heat containing 0.0025 to 0.006% boron hardened right through (48-50 R_C). The impact strength of steel with additions of 0.0035-0.006% boron decreases by about 30% and in the case of additional

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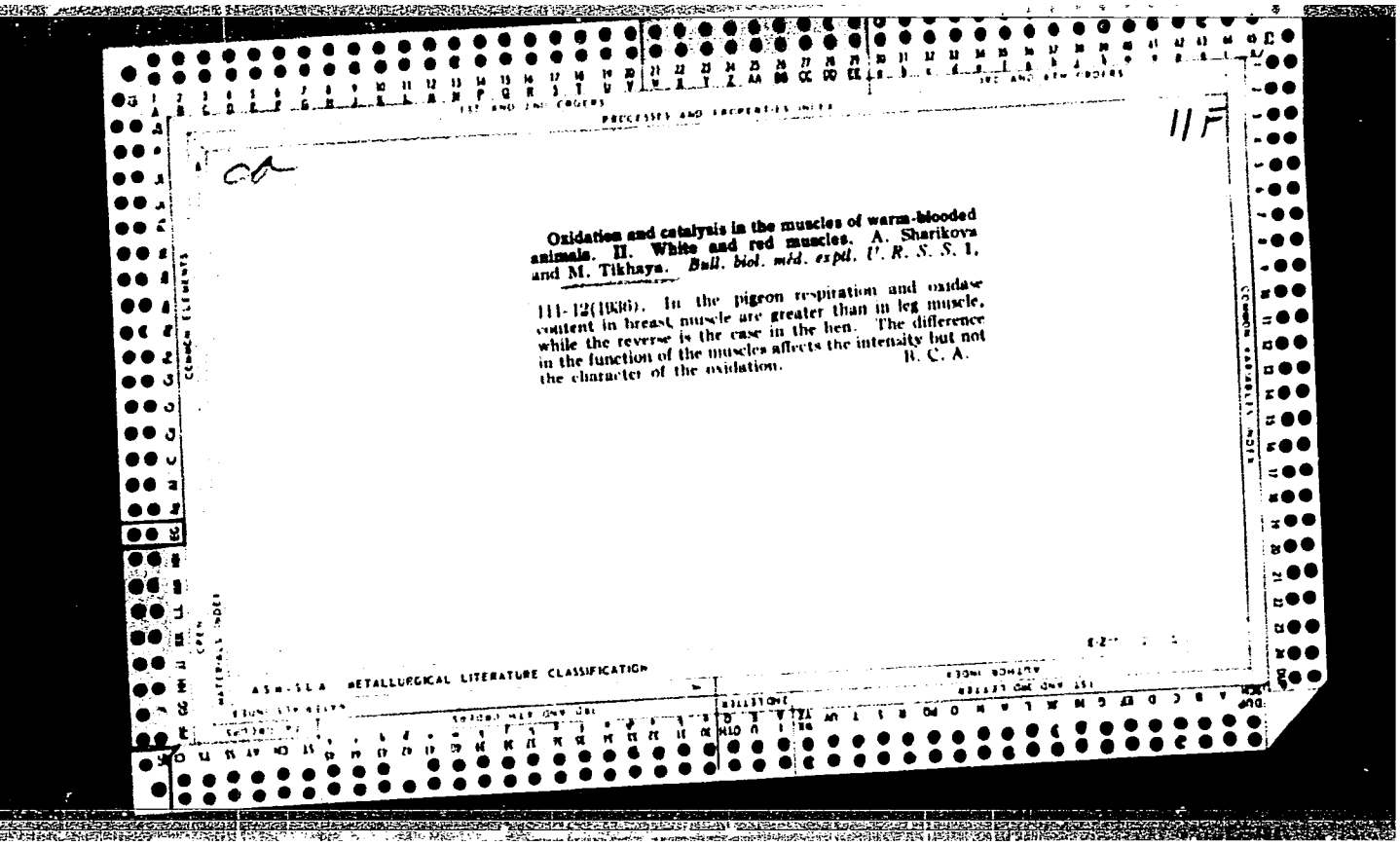
Scientific-Technical Conference on Metallography and Heat Treatment, Khar'kov

deoxidation with aluminium it drops by about 50%. The boron is absorbed non-uniformly by the metal. The results of spectral and chemical analyses have shown that the boron contents in the reference specimens and in components varied between wide limits (0.0016-0.005%). Machining of experimental components containing additions of boron did not cause any difficulty.

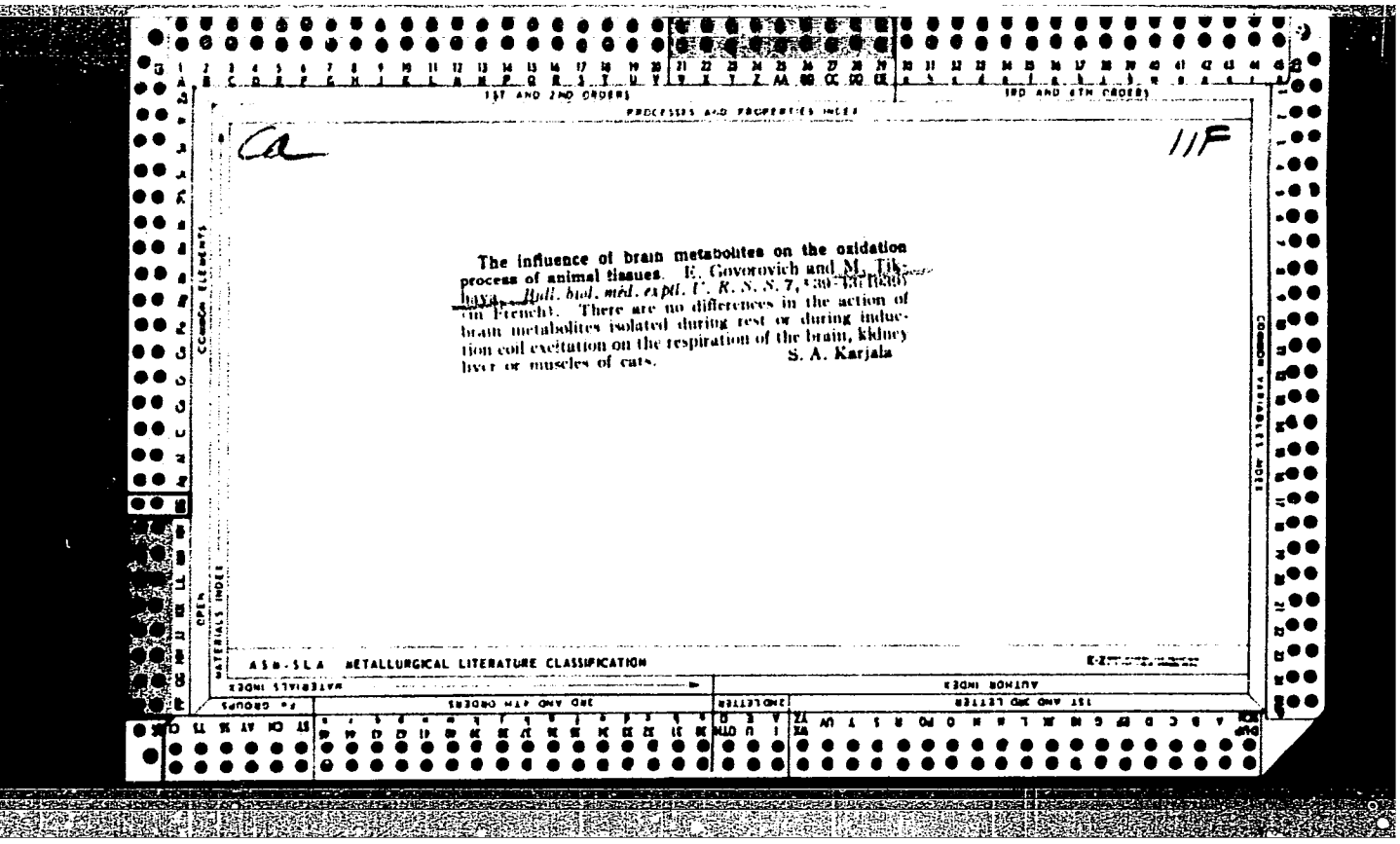
Engineer Yu. L. Revis (Giprotraktorsel'khozmash) reported on the organisation of heat treatment operations in machining flow production lines and gave examples in which equipment for through heat treatment was installed in such lines for mass producing components (H.F. heating for case hardening, hardening of components of simple shape, hardening of gears). He gave characteristics of the conditions of hardening of the teeth of the gears and also elucidated the prospects of organising the heat treatment operations in complex lines for manufacturing components using gas flame heating and using automatic control of the temperature and the composition of the gaseous medium.

Card 9/20

Candidate of Technical Sciences V. V. Gavranek (KhPI) reported on the investigations of cavitation erosion by



Oxidation and catalysis in the muscles of warm-blooded animals. II. White and red muscles. A. Sharikova and M. Tikhaya. *Bull. biol. méd. exptl. U. R. S. S.* 1, 111-12(1936). In the pigeon respiration and oxidase content in breast muscle are greater than in leg muscle, while the reverse is the case in the hen. The difference in the function of the muscles affects the intensity but not the character of the oxidation. B. C. A.



a

IIF

The influence of brain metabolites on the oxidation process of animal tissues. E. Govorovich and M. Tik- [illegible] *Bull. biol. méd. expl. U. R. S. S.* 7, [illegible] (In French). There are no differences in the action of brain metabolites isolated during rest or during induction coil excitation on the respiration of the brain, kidney liver or muscles of cats.

S. A. Karjala

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZOLINA, Z.M.; TIKHAYA, M.G.

Certain principles of "rhythmic" work in industry. Gig.i san. no.5:32-37 My '53. (MLRA 6:5)

1. Institut gigiyeny truda i professional'nykh zabolevaniy Akademii meditsinskikh nauk SSSR. (Work, Method of)

ZOLINA, Z.M.; TIKHAYA, M.G.

Certain principles in introduction of work rhythmicity in industry. Gig. sanit., Moskva no.5:32-37 May 1953. (CIML 25:1)

1. Of the Institute of Labor Hygiene and Occupational Diseases of the Academy of Medical Sciences USSR.

LETAVET, A.A.; RYAZANOV, V.A.; KHOTSYANOV, L.K.; MOROZOV, A.L.; MARTSINKOVSKIY, B.I.; MITEREV, G.A.; IVANOV, V.A.; IZRAEL'SON, Z.I.; ORLOV, N.I.; CHERKINSKIY, S.N.; BERYUSHOV, K.G.; KIBAL'CHICH, I.A.; TARASENKO, N.Yu.; DRAGICHINA, Ye.A.; VORONTSOVA, Ye.I.; SANINA, Yu.P.; KREMNEVA, S.N.; KULAGINA, N.K.; SHAFRANOVA, A.S.; TIKHAYA, M.G.; MOLOKANOV, K.P.; RAZUMOV, N.P.; KURLYANDSKAYA, E.B.; KHALIZOVA, O.D.

In memory of Professor N.S.Pravdin. Gig.i san. no.4:61 Ap '54.
(MLRA 7:4)
(Pravdin, Nikolai Sergeevich,)

AL 10621-66

ACC NR: AP5027303 SOURCE CODE: UR/0241/65/010/010/0050/0054

AUTHOR: Tikhaya, M. G.; Novikova, A. P.; Parfenov, Yu. D. 28

ORG: none B

TITLE: Distribution of uranium in the dog organism at periods long after the inhalation of uranium oxide

SOURCE: Meditsinskaya radiologiya, v. 10, no. 10, 1965, 50-54

TOPIC TAGS: experiment animal, isotope, ~~ion distribution~~, uranium compound, ~~chemical labelling~~ radiation biology effect

ABSTRACT: The metabolism of inhaled poorly soluble uranium compounds was studied with labeled U_3O_8 aerosol (U^{235} and U^{238}). The animals inhaled an aerosol containing 310.10^{-4} - 634.10^{-4} mg/l for 60 minutes daily for 5-7 days, a total of 300-420 minutes, and were then observed for up to 5 years. The animals' organs were examined shortly after 23, 31½ or 60 months by luminescence and radiometry to determine uranium contents. No difference was seen for the 2 isotopes. In the one dog sacrificed 20 minutes after 60 minutes inhalation of 135.10^{-4} $U^{235}_3O_8$ mg/l, the highest content was found in the gastrointestinal tract. The lung retained about 29% of the inhaled material but the content in

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UDC: 615.771.991-032:611.2-033

L 10621-66

ACC NR: AP5027303

the blood was insignificant. After 23 months, U^{235} content in the organs declined in the following order: lungs, bones, kidneys and liver. The dog examined after 31½ months had died a natural death. There the kidneys contained more uranium than the lungs. Semi-elimination from the lungs between the 23rd and 60th month was estimated at 10.1% with a biological half life of 280 days. After 60 months, accumulation was greatest in the mediastinal and bronchial lymph nodes and exceeded that in the lungs 550-870 fold. One of the sacrificed dogs was pregnant; 6 embryos were found in which U^{235} was detected. It was calculated that 0.01-0.06% of the U^{235} had passed from the mother's organism through the placenta. Orig. art. has: 4 tables.

SUB CODE: 06 / SUBM DATE: 14Dec64/ ORIG REF: 004/ OTH REF: 007

HW

Card 2/2

TIKHAYA, M.G.

Chronic action of small quantities of radioactive zirconium on animal organisms. Med. rad. 4 no.5:62-67 My '59. (MIRA 12:7)
(ZIRCONIUM, radioactive
chronic eff. of small quantities in dogs (Rus))

GORGIYEV, T.B.; TRIKOZ, V.S.; PODOSINNIKOVA, M.P.; TIKHAYA, R.I.

Preparing culture media from fishery wastes; author's abstract. Zhur. mikrobiol., epid. i immun. 30 no.11:114-115 N '59. (MIRA 13:3)

1. Iz Dnepropetrovskogo instituta epidemiologii, mikrobiologii i gigiyeny.

(BACTERIOLOGY--CULTURES AND CULTURE MEDIA)
(FISH PROCESSING PLANTS--BY-PRODUCTS)

TIKHCHEV, KH.

Quick-acting electronic calculating machines. p. 62. News from all the world. p. 64.

RADIO. Vol. 5, no. 7, 1956

Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 6, No. 1, January 1957

TIKHENKO, A. V., Candidate Agric Sci (diss) -- "Hardness of seed in two-harvest red clover as a factor increasing its yield". Kiev, 1959. 18 pp (All-Union Sci Res Inst of Fodders im V. R. Vil'yams), 150 copies (KL, No 22, 1959, 119)

TIKHENKO, A. V., Cand Agr Sci -- (diss) "Biological and Economical Significance of Seed Hardness of Twice-Harvested Red Clover." Kiev, 1957. 15 pp (All-Union Sci Res Inst of ~~Feedstuffs~~ Fodder im Academician V. R. Vil'yams), 100 copies (KL, 49-57, 114)

TIKHENKO, A. V.

Cand Agr Sci - (diss) "Hard seediness of red two-ukosnyy clover (Trifolium pratense) as a factor of increasing its harvestibility." Odessa, 1961. 20 pp; (Ministry of Agriculture Ukrainian SSR, Odessa Agr Inst); 260 copies; price not given; (KL, 10-61 sup, 222)

TIKHENKO, L., agronom; STUPAKOV, V., dots.

Raise stubble crops! Nauka i pered. op v sel'khoz. 9 no.6:19-20 Je '59. (MIRA 12:9)

1.L'vovskiy sel'skokhozyaystvennyy institut (for Stupakov).
(Field crops)

TIKHENKO, L.G., gornyy inzh.; STEL'MAKH, N.N., gornyy tekhnik; GUMENOK, G. Ye., gornyy tekhnik; VOLOSHIN, A.M., gornyy inzh.; BEREZOVSKIY, A.P., gornyy inzh.; LYUTYY A.L., gornyy inzh.; BUGAY, V.A., gornyy tekhnik-marksheyder

"Improving underground work" by IA. D. Grossman and E. M. Kozakov. Reviewed by L. G. Tikhenko and others. Gor. zhur. no.3:3-7 Mr '61. (MIRA 14:3)

1. Rudoupravleniye im. Rozy Lyuksemburg, Krivoy Rog (for Tikhenko, Stel'makh, Gumenok). 2. Shakhta "Kommunar-Probeda", Krivoy Rog (for Voloshin, Berezovskiy, Lyutyy). 3. Shakhta "Novaya" rudoupravleniya im. Rozy Lyuksemburg (for Bugay).
(Mining industry and finance)
(Grossman, IA. D.) (Kozakov, E. M.)

STEL'MAKH, N.I., gornyy tekhnik; GUMENYUK, G.Ye., gornyy tekhnik; TIKHENKO, L.G., gornyy inzh.

Rapid development of blocks. Met. i gornorud. prom. no.1: 75-77 Ja-F '62. (MIRA 16:6)

(Mining engineering)

TIKHENKO, Ye.A.

Sleep therapy of early pregnancy toxemias. Akush. gin. no.6:25-28 Nov-Dec 1952. (CLML 23:4)

1. Docent. 2. Of the Department of Obstetrics and Gynecology (Head -- Prof. Ye. Ya. Stavskaya), Stavropol' Medical Institute.

TIKHENKO, Yu.N., kand.tekhn.nauk

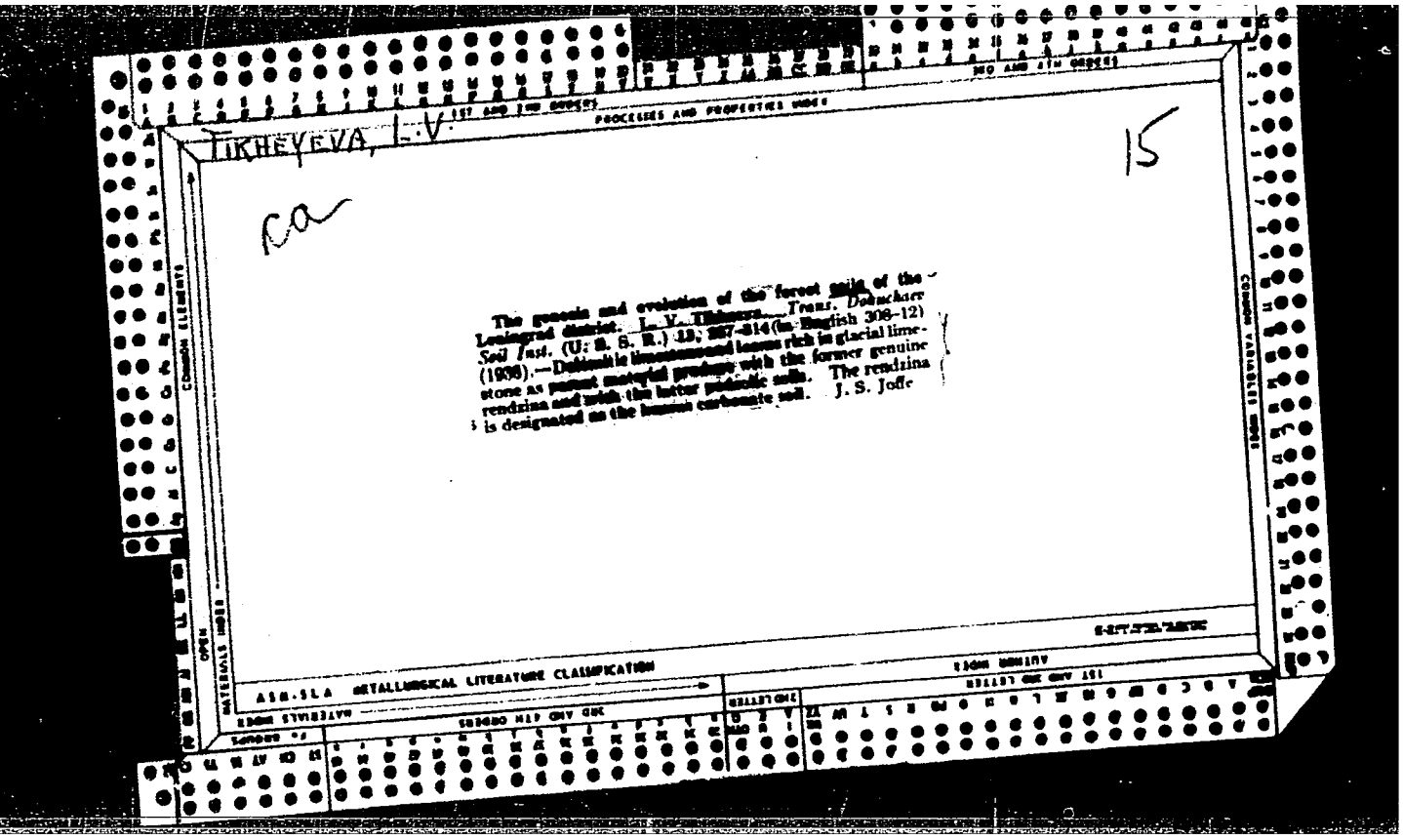
Mechanical properties of steels used in construction.
Sbor.trud.IUZHNII no.3:255-267 '59. (MIRA 13:7)
(Steel, Structural)

TIKHENKO, Yu.N., kand.tekhn.nauk

Action of internal forces in beams subjected to bending beyond elastic limits. Sbor.trud.IUZHNII no.3:268-294 '59. (MIRA 13:7)

(Girders) (Strains and stresses)

TIKHER, Ye. A. Cand Tech Sci -- "Study of certain processes of the thermoplastic technology of manufactured ceramic articles." Mos, 1960 (Min of Higher and Secondary Specialized Education RSFSR. Mos Order of Lenin Chemicotechnological Inst im D. I. Mendeleyev). (KL, 1-61, 198)



TIKHILOV, M.A., kapitan meditsinskoy sluzhby

Acuteness of vision under reduced illumination in persons with astigmatism. Voen.-med. zhur. no. 6:83 Je '60. (MIRA 13:7)

(VISION) (ASTIGMATISM)

TIKHILOV, M.A.

Specific type of bilateral acute uveitis with chyluria. Vest. oft. 73 no. 2:43-44 Mr-Ap '60. (MIRA 14:1)
(CHYLE) (EYE—DISEASES AND DEFECTS)

TIKHILOVA, M.I. (Ordzhonikidze, ul. Charmena Beyeva, d.47)

Late results of conservative treatment of congenital dislocations of the hip. Ortop., travm. i protez. 25 no.12:48-53 '64. (MIRA 19:1)

1. Iz Severo-Kavkazskogo meditsinskogo instituta (rektor - kandidat M.A.Torrov). Submitted March 10, 1964.

IVANOV, V.Ye.; AMONENKO, V.M.; TIKHINSKIY, G.F.; KRUGLYKH, A.A.

Refining beryllium by vacuum distillation. Fiz. met. i metalloved. 10 no.4:581-585 O '60. (MIRA 13:11)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Beryllium--Metallurgy) (Vacuum metallurgy)

TIKHINSKIY, G. F., IVANOV, V. YE., SINELNIKOV, K. D. and AMONENKO, V. M.

"Some Properties of Pure Beryllium."

Report presented (by V. Ye. Ivanov) at the Atomic Energy Research Establishment Harwell UK August 1961

Physical-Technical Institute, Academy of Sciences, Ukrainian SSR

20791

18.8200 1418, 4016, 2807 1035

S/181/61/003/003/017/030
B102/B205

AUTHORS: Amonenko, V. M., Tikhinskiy, G. F., Finkel', V. A., Azhazha, V. M., Shpagin, I. V.

TITLE: Plastic deformation of textured beryllium

PERIODICAL: Fizika tverdogo tela, v. 3, no. 3, 1961, 796-802

TEXT: Single crystals of beryllium show highly anisotropic mechanical properties on account of their hexagonal crystal structure. A study has now been made of the mechanical properties of high-purity beryllium foils. For this purpose, thin textured Be foils of high purity (99.987% without taking hydrogen into account) were prepared by condensation of beryllium vapor on molybdenum sheet in a vacuum of $1 \cdot 10^{-6}$ mm Hg. The rate of evaporation was 0.2 g/cm^2·hr, the condensation temperature was 300-320°C, and the temperature of heat treatment was 700°C for one hr. These conditions were the same for all specimens. The purity was checked by a determination of the resistivity ratio: $R_{4.2°K}/R_{293°K} = 9 \cdot 10^{-3} - 1.5 \cdot 10^{-2}$. The grain size varied from 8 to 15 μ, the foils had a thickness of 170-300 μ, and the density was

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Plastic deformation ...

1.831 g/cm^3. The texture was studied by X-ray analysis using a tube designed by B. Ya. Pines and V. S. Kogan. Two different textures (I and II) were studied. Texture I of the Be foil showed no relationship with that of the molybdenum backing which had been carbidized. The X-ray diagrams showed no (002) line, i.e., an axisymmetric texture with the axis [001] (perpendicular to the surface of the foil) could be assumed. Texture II showed "interaction" of the condensate of hexagonal beryllium with the backing (body-centered cubic Mo) with the texture (100) [011]. On account of this "interaction", the basal plane (002) was orientated at an angle of 45° toward the surface of the foil, which resulted in a shift of the interference points. The plastic deformation (rate: 1% per min) was studied at 20-800°C. The temperature was measured by means of a Pt-PtRh thermocouple (accuracy: $\pm 2^{\circ}$). The specimens had a size of 50 x 4 x (0.17-0.3) mm. Three kinds of specimens with different directions of the texture relative to the direction of expansion were studied. Type I: The basal plane coincided with the plane of the specimen. The temperature dependence of the breaking point σ_b of the longitudinal expansion δ and of the lateral contraction Ψ was measured (Fig. 4). The maximum value of σ_b at room tem-

Plastic deformation ...

perature was 43 kg/mm^2. δ increased monotonically from 14% at room temperature to 77% at 600°C. These specimens showed a three-dimensional plasticity. X-ray analysis disclosed effects of prismatic sliding in the entire range of temperatures (20-800°C). Type II: The basal plane formed an angle of 45° with the plane of the specimen. It showed practically the same temperature dependence of σ_b; at room temperature σ_b = 44 kg/mm^2 and δ = 18% (somewhat higher than in the case of I). These specimens exhibited a two-dimensional plasticity. The temperature-dependent variations in width and thickness are illustrated in Fig. 5. The two types show different rupture. Type III: The same texture as II but expansion in the direction [010]. These specimens showed a particularly low strength; at room temperature, there is practically no longitudinal expansion. X-ray diagrams showed no variations. Only at 200°C they showed an insignificant shift of the intensity maxima. Maximum δ appeared at 550°C (26.5%). The behavior of these specimens on expansion in one direction perpendicular to the plane of a prism of type II is similar to Be single crystals. I. A. Gindin and V. S. Kogan are thanked for a discussion. There are 6 figures and 16 references: 11 Soviet-bloc and 5 non-Soviet-bloc.

Card 3/5

Plastic deformation ...

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov (Institute of Physics and Technology, AS UkrSSR, Khar'kov)

SUBMITTED: July 15, 1960

Legend to Figs: 1 - I, 2 - II, 3 - III (type of texture);
a) change in width, b) change in thickness.

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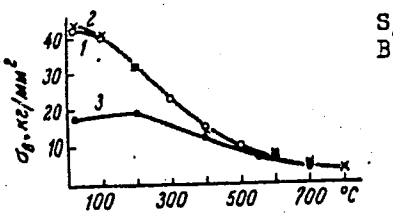
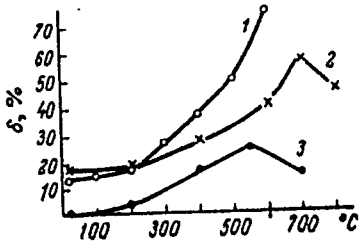
Plastic deformation ...





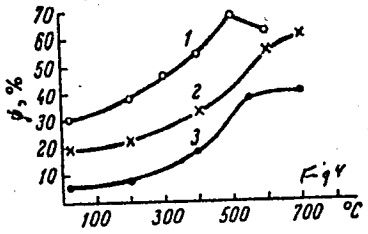
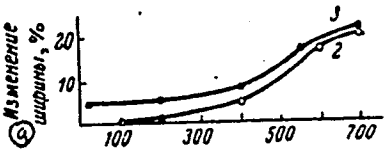


Fig 4



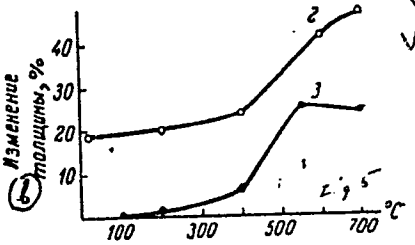


Fig 5

Card 5/5

AMONENKO, V.M.; KRUGLYKH, A.A. [Kruhlykh, A.A.]; TIKHINSKIY, G.F. [Tykhins'kyi, H.P.]

Vacuum distillation of chromium. Ukr. fiz. zhur. 6 no.3:390-393 My-Je '61. (MIRA 14:8)

1. Fiziko-tekhnicheskiy institut AN USSR, g. Khar'kov.
(Mass transfer)
(Chromium)

S/126/61/011/001/018/019
E032/E314

18.7530

AUTHORS: Papirov, I.I. and Tikhinskiy, G.F.

TITLE: On the Temperature Dependence of the Condensation Coefficient

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 11, No. 1, pp. 155 - 156

TEXT: It is well known that the condensation coefficient α of a substance on a given base, which is defined as the fraction of "condensed" molecules, depends on the temperature of the base, the nature of the surface, the thickness of the deposit and the energy of the incident particles. It has been shown experimentally (Knudsen and Weyssenhoff - Ref. 1 and Devienne - Ref. 2) that the condensation coefficient may vary from 0 to 1 in a certain temperature interval. The magnitude of this temperature interval depends on the nature of the deposited material and for certain materials may reach a few hundreds of degrees. The above authors have assumed that the condensation coefficient α decreases monotonically with decreasing temperature. However, in a number of cases,

S/126/61/011/001/018/019
E032/E314

On the Temperature Dependence ...

the temperature dependence of α may be more complex. It is well known that when vapours of metals are condensed on an amorphous base, certain preferred orientations appear in the condensate (Dixit - Ref. 3, Herbstein - Ref. 4 and Bruck - Ref. 5). These orientations are such that the plane with the maximum reticular density is parallel to the base. A change in the temperature of the target leads to a change in the orientation in such a way that at higher temperatures planes with lower reticular density will become parallel to the base. On the other hand, it is known that the condensation coefficient on planes with different packing density is different (Rideal and Wiggins - Ref. 6). In this connection, the authors consider the results of Walter (Ref. 7) who has measured the condensation coefficient for mercury deposited on a nickel base. Walter has found that the condensation coefficient has a minimum between -85 and -95 °C. He has explained this minimum by assuming

On the Temperature Dependence .....

that the re-evaporation of mercury atoms from mercury crystals is more intensive than the re-evaporation from nickel crystals. The present authors used the Dixit formula (Ref. 3)

$$T = \frac{\varepsilon T_{melt}}{d} \qquad (1)$$

(where T_{melt} is the melting point of the condensate, ^{o}K,
ε is the atomic radius and
d is the distance between the orientated planes)

to show that in the case of mercury and in the above temperature region two orientations are possible, namely: a) the (100) plane with d = 2.77 parallel to the base at about -100 °C; b) the (110) plane with d = 2.55 parallel to the base at -70 °C. It follows that for

Card 3/5

89950

S/126/61/011/001/018/019
E032/E314

On the Temperature Dependence ....

condensation temperatures between the critical (-77 °C) and -85 °C, the plane (110) continues to be parallel to the base and α increases from 0 to 1. At -85 °C, the (110) orientation begins to appear and the minimum at -95 °C is due to the predominance of the latter orientation. Further increase in α is due purely to a temperature effect. From this point of view, the dependence of the condensation coefficient on time (Ref. 7) becomes understandable. For short times of condensation, when a large fraction of the nickel surface is still available, the minimum on the α versus T curve is not observed. For long times, on the other hand, the minimum is smoothed out as a result of the orientation effects associated with increasing thickness of the layer.

Card 4/5

89950

S/126/61/011/001/018/019
E032/E314

On the Temperature Dependence ....

There are 1 figure and 7 non-Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute of the AS Ukrainian SSR)

SUBMITTED: August 15, 1960

Card 5/5

18.1215 2808,1555, 1418 25927 S/126/61/012/001/009/020
E021/E406

AUTHORS: Amonenko, V.M., Papirov, I.I., Tikhinskiy, G.F. and Finkel', V.A.

TITLE: Orientated growth of beryllium precipitates on oriented and on isotropic bases

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.12, No.1, pp.73-77

TEXT: The plasticity of beryllium can be increased by preparing it with a preferred orientation. A preferred orientation can sometimes be obtained by condensing the metal onto a base with a preferred orientation or by changing the angle between the direction of the molecular stream and the normal to the base. In the present work, the structure of beryllium precipitates prepared by the condensation of vapour in vacuo on a textured base of various metals, and also the variation of structure with the angle of inclination of the molecular stream to the base, were investigated. The method of precipitation used was described earlier (Ref.10: FMM, 1960, 10, 4, 581). Beryllium of 99.987% purity (discounting oxygen) was vaporized in a resistance furnace with a BeO crucible. The rate of evaporation was about 0.2 g/cm^2 hr, the condensation

surface temperature 300 to 350°C. The precipitate was annealed for 1 hour at 700 to 750°C. Precipitation was carried out in a vacuum of (1 - 5) x 10^{-6} mm Hg. Rolled sheets of Mo, Ta, Ni, Cu, Ti and armco Fe were used as a base. The texture of the condensed beryllium was investigated by X-ray methods. Some of the photographs obtained are shown in the paper (of a layer condensed on a molybdenum base, on nickel, and on an amorphous base). Fig.2 shows the orientation of the crystals on the same bases. The results are given in the table. Epitaxial growth was observed in several cases with precipitates up to 500 μ thick. The best plastic properties of beryllium were obtained by condensation in the [$2\bar{1}\bar{1}$] direction on a molybdenum base, and on a neutral base. The orientation of beryllium condensed on a nickel base is unfavourable for plastic deformation. There are 2 figures, 1 table and 16 references: 9 Soviet and 7 non-Soviet. The four most recent references to English language publications read as follows: Newman R.C. Proc.Phys.Soc., 1956, B69, (4), 432;
James J.A. Trans. Faraday Soc., 1955, 51, 833;
Finch G.I., Sun C.H. Trans. Faraday Soc., 1936, 32, 852;
Burgers W.G., Dippel C. J.Physica, 1934, 1, 549.

25917 S/126/61/012/001/009/020
Orientated growth of beryllium ... E021/E406

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physicotechnical Institute AS UkrSSR)

SUBMITTED: November 9, 1960 (initially)
January 11, 1961 (after revision)

X

Card 3/5

33453
S/126/61/012/006/010/023
E021/E435

187500 1418
21, 2100

AUTHORS: Amonenko, V.M., Ivanov, V.Ye., Tikhinskiy, G.F., Finkel', V.A., Shpagin, I.V.

TITLE: The high temperature polymorphism of beryllium

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.6, 1961, 865-872

TEXT: Measurements of the electrical conductivity of beryllium were carried out on specimens in the form of plates about 0.3 mm thick, prepared by condensing beryllium vapour on molybdenum sheet at 300°C and 2 x 10^{-6} mm Hg pressure. The beryllium was of purity 99.96 to 99.97% (total metallic impurities 0.01%, oxygen content 0.01% and carbon content less than 0.02%). The density of the beryllium was 1833 g/cm^3. The plates had axial symmetry with the [001] axis perpendicular to the surface. Electric resistance measurements were carried out in the range 18 to 1280°C, in an atmosphere of purified helium above 900°C. Fig.1 shows the relation between temperature and relative electrical resistance of beryllium. Curve 1 is for 99.97% beryllium and shows a continuous smooth increase with increase in

Card 1/3

33453
S/126/61/012/006/010/023
E021/E435

The high temperature ...

1036; Ref.7: Seybolt A., Lukesh I., White D. J. Appl. Phys., v.22, 1951, 986; Ref.11: Martin A.J., Moore A.J. Less-Common Met., v.1, (2), 1959, 85.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physicotechnical Institute AS UkrSSR)

SUBMITTED: April 19, 1961

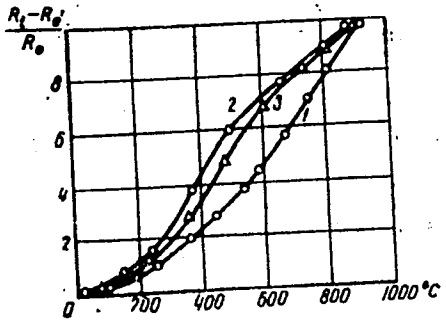


Fig.1.

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S/126/62/013/006/013/018
E021/E192

AUTHORS: Amonenko, V.M., Papirov, I.I., Tikhinskiy, G.F., and Finkel', V.A.

TITLE: Investigation of whisker crystals of beryllium. I. Preparation of whisker crystals and determination of their orientation.

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.6, 1962, 928-930

TEXT: Single crystal beryllium whiskers were prepared by evaporation in vacuo and condensation of the vapour on a cylindrical column of molybdenum sheet. Distilled beryllium of purity 99.99% (neglecting oxygen and carbon) was used. The vaporising temperatures were 1365-1600 °C and the condensing temperatures 770-950 °C. The rate of evaporation varied from 0.4 to 0.9 g/cm^2.hour, and the rate of growth of the whiskers from 0.01 to 0.07 g/cm^2.hour. The majority of the crystals had a diameter of several tenths of a micron and a length of several millimetres. X-ray investigations (by rotating the sample in the D-S camera) showed that the whiskers were single crystals.

Investigation of whisker crystals ... S/126/62/013/006/013/018
E021/E192

There was some splitting of reflections indicating plastic deformation in the process of removal from the condensate. The directions of growth of the crystals investigated were [221], [331], and [111]. Thus the growth does not occur in the direction of closest packing.
There are 2 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR
(Physicotechnical Institute, AS Ukr.SSR)

SUBMITTED: December 2, 1961

Card 2/2

S/126/62/014/001/012/018
E193/E383

54300

AUTHORS: Amonenko, V.M., Ivanov, V.Ye., Tikhinskiy, G.F. and Finkel', V.A.

TITLE: On the problem of the solubility of impurities in beryllium

PERIODICAL: Fizika metallov i metallovedeniye, v. 14, no. 1, 1962, 128 - 130

TEXT: Data on the solid solubility of nonmetallic impurities (carbon, nitrogen, oxygen) in beryllium are scarce and sometimes contradictory. This prompted the present authors to study this problem by comparing the temperature-dependence of the lattice parameters of high-purity beryllium with that of beryllium containing nonmetallic impurities in quantities sufficient to ensure the formation of saturated solid solutions. These relationships are demonstrated in Fig. 1, where the magnitude (kX) of a (lefthand scale) and c (righthand scale) is plotted against the temperature (°C), the broken and continuous curves relating, respectively, to specimens containing 0.4% impurities (mainly C and O) and 99.98% pure beryllium,

Card 1/3

On the problem of ....

the dotted lines representing data obtained by Martin and Moore (Less-Com. Metals, 1959, 1, no. 2, 85) for commercial-grade metal. The solubility limit at 1 200 °C was evaluated in the following manner: experimental data on the degree of lattice distortion (Δc, kX/1 at.%) of Ti and Zr due to dissolution of oxygen (C.F. Domogola, D.J. McPherson - J. Metals, 1954, 6, 2, 238; E.S. Bumps, H.D. Kessler, H. Hunsen - Trans. ASM, 1953, 45, 1008) were plotted against the reciprocal of the volume of the elementary cells of these metals (i.e. against the value characterizing the size of the interstitial pores); on linear extrapolation of this graph to the reciprocal of the volume and elementary cell of Be, the magnitude of Δc = 0.02 kX/1 at.%, was obtained, which corresponded to the total solubility of interstitial impurities equalling 1 to 1.5%. This value, although evidently too high owing to inaccuracy of extrapolation and inability to take into account the increase in the thermal-expansion coefficient due to distortion of the vibration spectrum of the lattice by the impurity atoms, is not in contradiction to the value of 0.3% obtained by metallographic analysis (J. Greenspan. TID - 7526 (part 1), 1957 (quoted

Card 2/

AMONENKO, V.M.; IVANOV, V.Ye.; TIKHINSKIY, G.F.; FINKEL', V.A.

X-ray study of the solubility of impurities in beryllim. Fiz. met.i metalloved. 14 no.6:852-856 D '62. (MIRA 16:2)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.
(Beryllium--Inclusions)
(X rays--Industrial applications)

L 12792-63 EWP(q)/EWT(m)/BDS AFFTC/ASD WH/JD/JG
ACCESSION NR: AP3000779 S/0070/63/008/003/0451/0453

AUTHOR: Matyushenko, N. N.; Tikhinskiy, G. F.

TITLE: Yttrium beryllide and compounds of the type ABe sub 13

SOURCE: Kristallografiya, v. 8, no. 3, 1963, 451-453

TOPIC TAGS: Be-Y alloys, intermetallic compounds, Sc, Hf, Zr, Mg, Er, Y, Ca, Am, Np, U, Pu, Th, Ce, La

ABSTRACT: The authors have studied the system Y-Be in order to establish the intermetallic compounds of the two and also to test the systematic pattern in compounds of the type ABe sub 13 according to their formula volumes. Values of the lattice constants were computed from x-ray powder diagrams, and these were used with the appropriate space group to determine the yttrium-beryllide formula. The experiments demonstrate that the cubic phase of YBe sub 13 (isomorphous with NaZn sub 13) exists. It has a lattice constant of a = 10.238 + or - 0.002 Angstro Known beryllides of the composition ABe sub 13 may be divided into three groups, depending on the ratio of total volume to volume of A components. These groups are: 1) Sc, Hf, Ze; 2) Mg, Er, Y, Ca, Am; and 3) Np, U, Pu, Th, Ce, La. Group (3) has a higher content of A components than group (2). Group (1) is distinct, but it was not computed. The authors conclude that the separation into groups is

Card 1/2

L 12792-63
ACCESSION NR: AP3000779

apparently associated with peculiarities in electron structure of the A components in their combination with beryllium. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR (Physical and Technical Institute, AN UKrSSR)

SUBMITTED: 24Oct62 DATE ACQ: 21Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 006 OTHER: 005

Card 2/2

L 4075-66 EWP(e)/EWT(m)/EWP(t)/EWP(k)/EWP(z)/EWP(b) LJP(c) JD/JG

ACC NR: AP5023768 SOURCE CODE: UR/0089/65/019/003/0269/0272

AUTHOR: Azhazha, V. M.; D'yakov, I. G.; Papirov, I. I.; Tikhinskiy, G. F.

ORG: none

TITLE: Change in beryllium properties during aging

SOURCE: Atomnaya energiya, v. 19, no. 3, 1965, 269-272

TOPIC TAGS: beryllium, beryllium powder, beryllium property, beryllium heat treatment

ABSTRACT: The effect of aging on the mechanical properties of beryllium at elevated temperatures and the relationship between the mechanical properties and electrical resistance of aged beryllium have been studied. Hot-compacted commercial-grade (99.64%) beryllium specimens with a density of 1.844 g/cm^3, a tensile strength of 23 and 13 to 13.5 kg/mm^2 and an elongation of 1 and 10.5% at 20 and 600C, respectively, were homogenized at 1100C for 15 min, cooled to 800C at a rate of 100C per min, to 600C at a rate of 20C per min, and to room temperature at a rate of 5C per min, and then aged at 700, 750, 800, and 850C for 4, 40, or 100 hr. It was found that aging increases the ductility of beryllium, especially at high temperatures (see Fig. 1). The tensile strength of aged specimens was 16—17 kg/mm^2 at 400C and 13—14 kg/mm^2 at 600C; it decreased to 11.4—11.8 kg/mm^2 for specimens aged at 800—850C. Yield strength for all tested specimens varied in the range 8.5—9.5 kg/mm^2, but dropped to 7.8 kg/mm^2 after aging at 700C for 100 hr. Curves showing the dependence of elongation and elec-

Card 1/2 UDC: 546.45

L 4075-66

ACC NR: AP5023768

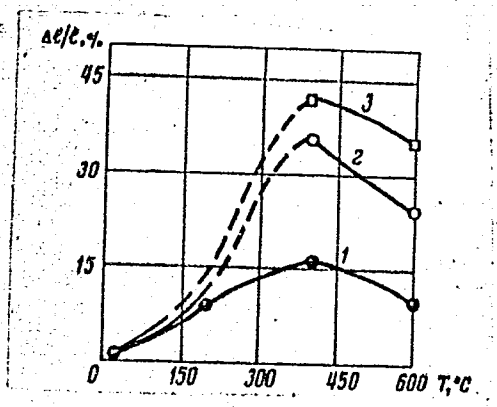


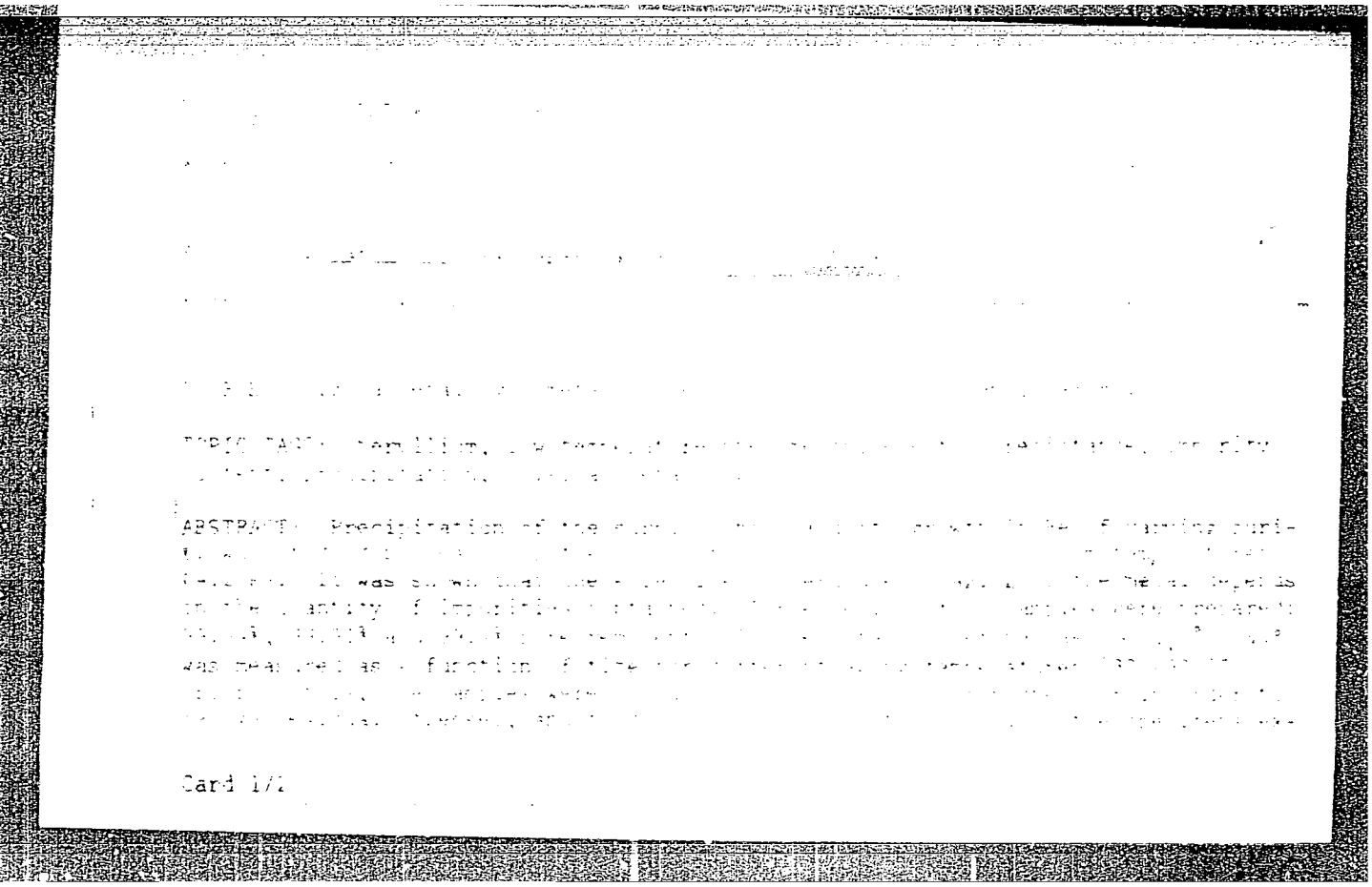
Fig. 1. Temperature dependence of beryllium (1) homogenized, (2) aged at 750C for 40 hr; and (3) aged at 700C for 100 hr.

trical resistance on aging time are similar; resistance decreases proportionally to the increase in elongation. Orig. art. has: 6 figures and 1 table. [AZ]

SUB CODE: MM, AS/SUBM DATE: 25Aug64/ ORIG REF: 003/ OTH REF: 000/ ATD PRESS: 4128

BVK

Card 2/2



ABSTRACT:

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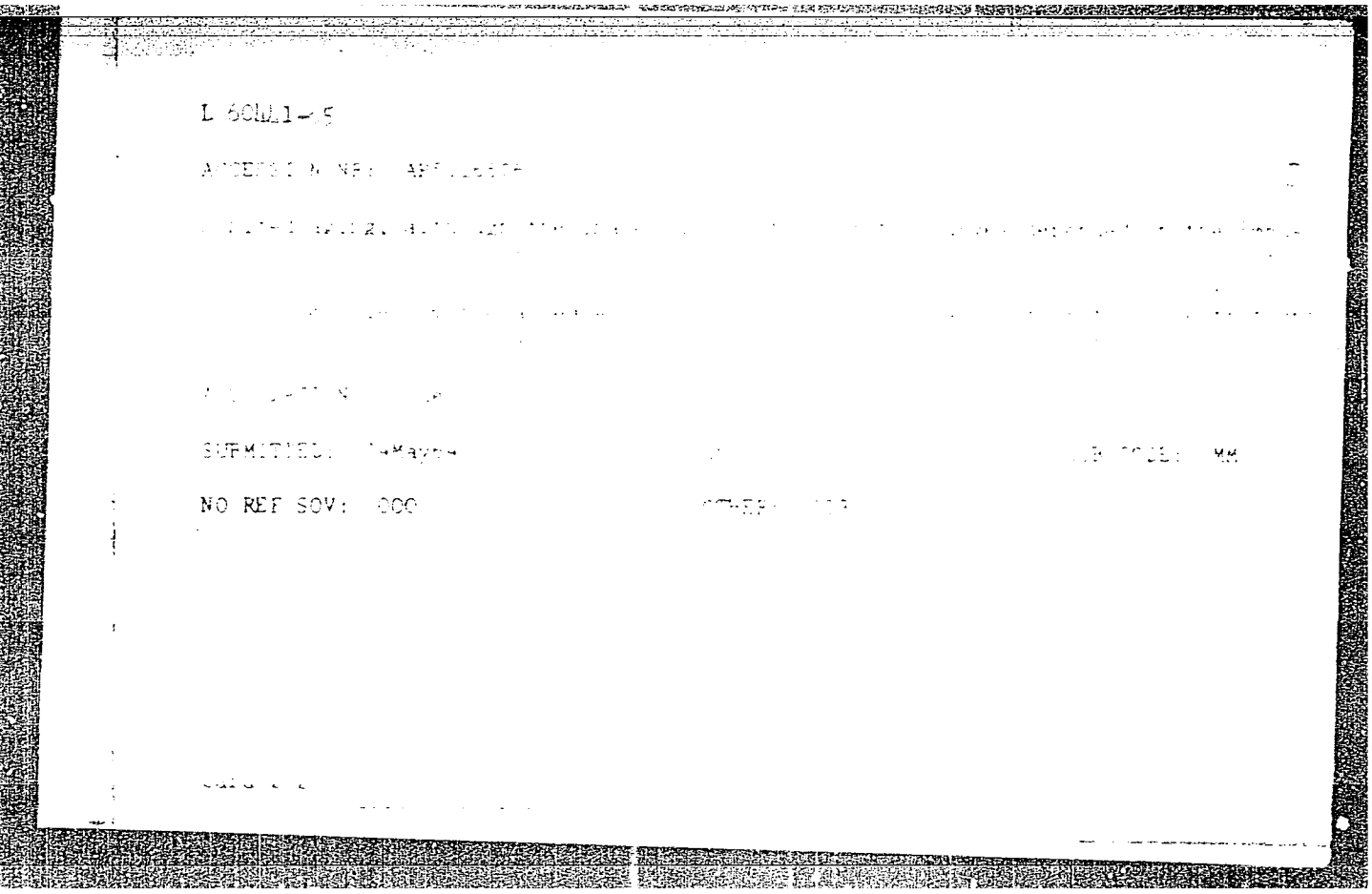

L 60LL1-5

NO REF SOV: 000

L 25563-66 EWT(m)/EWP(t) IJP(c) JD/JW

ACC NR: AM6004741 Monograph UR/ 32 B+1

Ivanov, Viktor YEvgen'yevich; Papirov, Igor' Isaakovich; Tikhinskiy, Gennadiy Filippovich; Amonenko, Vasiliy Maksimovich

Pure and superpure metals; production by the method of distillation in a vacuum (Chistyye i sverkhchistyye metally; polucheniye metodom distillyatskii v vakuume) [Moscow], Izd-vo "Metallurgiya", 1965. 263 p. illus., biblio. 3,100 copies printed

TOPIC TAGS: vacuum distillation, metal vapor deposition, metallurgic process

PURPOSE AND COVERAGE: The book presents the theoretical principles of the separation of metals by evaporation, calculations of different binary metallic systems, and a discussion of the advantages and shortcomings of the method of obtaining pure metals by distillation in vacuum. The apparatus used to distill metals and the technology of its construction are described. The results of laboratory tests on purification of various metals by distillation, the parameters of the apparatus, the operating conditions for the processes, and also commercial installations for vacuum distillations are considered in detail. The book is designed for engineering metallurgists and scientific workers in metal physics and physical chemistry; in addition, it can be used as a text by senior students in metallurgical high institutions of learning.

TABLE OF CONTENTS [abridged]:

Card 1/2 UDC: 669.015.4

L 25563-66

ACC NR: AM6004741

SUB CODE: 11, 14/ SUBM DATE: 12Jul65/ ORIG REF: 168/ OTH REF: 231

Card 2/2 FW

L 29361-66 EWT(m)/T/EWP(t)/ETI IJP(c) WW/JD/JG
ACC NR: AP6017311 (N) SOURCE CODE: UR/0126/66/021/005/0785/0786

AUTHOR: D'yakov, I. G.; Papirov, I. I.; Tikhinskiy, G. F.

ORG: Physicotechnical Institute, AN UkrSSR (Fiziko-tekhnicheskiy institut AN UkrSSR)

TITLE: Aging of beryllium-chromium and beryllium-zirconium alloys

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 5, 1966, 785-786

TOPIC TAGS: beryllium, beryllium alloy, chromium containing alloy, zirconium containing alloy, aging, alloy aging

ABSTRACT: Beryllium alloys containing 0.3%Cr or 0.3%Zr melted from 99.95%-pure Be, 99.7%-pure Cr and 99.9%-pure iodide Zr were rolled in vacuum at 900C, homogenized at 1050C for 40 min, cooled at a rate of 40 deg/hr, and aged at 500—900C for 1—100 hr. The criterion of aging was the relative residual electrical resistance: $\delta = R_{4.2K}/R_{20C}$. Homogenized Be-0.3%Cr and Be-0.3%Zr alloys had a δ of $(5.4—59)\cdot10^{-2}$ and $(6.3—6.5)\cdot10^{-2}$, respectively. The optimum aging temperatures, corresponding to a minimum δ, were 600 and 625—650C for Be-0.3%Zr and Be-0.3%Cr alloys, respectively. The absolute decrease of δ in aging Be-0.3%Cr alloy was close to the decrease of δ for the initial distilled Be, which indicated a practically complete precipitation of Cr from the

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L 29361-66

ACC NR: AP6017311

matrix with aging. In Be-0.3%Zr alloy, zirconium apparently not only completely precipitated from the matrix, but also promoted precipitation of other impurities. Complete segregation of Cr and Zr occurred in 4 hr at 650—700C and in 1 hr at 800C. At temperatures higher than 825C (for Be-Cr alloy) and 850C (for Be-Zr alloy) decomposition of the secondary phases begins, which leads to an increase in the electrical resistance. The solubility limit of Cr in Be-0.3%Cr alloy and of Zr in Be-0.3%Zr alloy is at a temperature above 850 and 900C, respectively. Orig. art. has: 1 figure and 1 table. [MS]

SUB CODE: 11, 13/ SUBM DATE: 26Jul65/ ORIG REF: 002/ OTH REF: 001
ATD PRESS: 5009

Card 2/2

L 44305-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6019841 SOURCE CODE: UR/0370/66/000/001/0190/0192

AUTHOR: Amonenko, V. M. (Khar'kov); Kruglykh, A. A. (Khar'kov); Pavlov, V. S. (Khar'kov); Tikhinskiy, G. F. (Khar'kov)

ORG: none

57

TITLE: Evaporation rate of beryllium during dissociation of cerium beryllide

SOURCE: AN SSSR. Izvestiya. Metally, no. 1, 1966, 190-192

TOPIC TAGS: beryllium, vacuum sublimation, cerium compound, vapor pressure

ABSTRACT: The article presents the results of an investigation of the evaporation rate of Be during the thermal dissociation of the intermetallic compound $CeBe_{13}$, as well as of the effect of the addition of a small amount (0.4 wt.%) of Ce on the evaporability of Be. $CeBe_{13}$ was obtained by the vacuum heating of a stoichiometric mixture of the powders of Ce and Be at 1150°C for 3 hr, while the Be-0.4% Ce alloy was obtained by direct vacuum melting of the metals. The sublimation rates of the Be-0.4% Ce alloy and of the products of dissociation of $CeBe_{13}$ were determined by the method of evaporation from a cylindrical tantalum crucible with a residual gas pressure of $\leq 2 \cdot 10^{-6}$ mm Hg in the vacuum chamber. The temperature was measured with

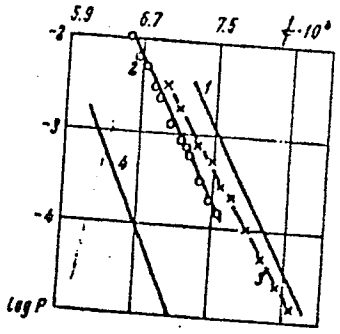
Card 1/3 UDC: 669.725.4

the aid of an optical pyrometer correct to ±5%. Weighing of the crucibles was carried out correct to ±0.0001 g by the continuous method on scales without violating the vacuum. The sublimation rate of Be with 0.4% Ce was measured in the temperature range 920-1160°C; for this temperature range the saturated vapor pressure of Be over the Be-0.4% Ce alloy is described by the equation: log P = 9.35-17,000/T. As for the sublimation rates of the components of the intermetallic compound $CeBe_{13}$, during its thermal dissociation in the temperature range 1050-1250°C, the roentgenograms of the condensates gathered following evaporation of the compound at 1100 and 1250°C lack the lines of Ce and $CeBe_{13}$; therefore, appreciable dissociation occurs above 1050°C and the entire sublimated matter may be referred to Be. The saturated vapor pressure of Be over the $CeBe_{13}$ compound during the latter's thermal dissociation may be described by the equation: log P = 10.475-18,990/T. The findings were utilized to plot curves of the saturated vapor pressure of the compounds and their components (Fig. 1). Orig. art. has: 1 figures, 2 tables, 2 formulas.

L 44308-66
ACC NR: AP6019841

Fig. 1. Vapor pressure (P, mm Hg) of Be as a function of temperature for:

1 - pure Be; 2 - over the compound $CeBe_{13}$ during its thermal dissociation; 3 - over the alloy Be-0.4% Ce; 4 - pure Ce



SUB CODE: 11, 13, 20 SUBM DATE: 25Jul64/ ORIG REF: 006/ OTH REF: 001

Card 3/3 ULR

L 04784-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6024471 SOURCE CODE: UR/0181/66/008/007/2092/2097

62
60
13

AUTHOR: Finkel', V. A.; Papirov, I. I.; Tikhinskiy, G. F.

ORG: Physicotechnical Institute AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut AN UkrSSR)

TITLE: Investigation of plastic deformation of single crystals of beryllium during compression

A 14 27

SOURCE: Fizika tverdogo tela, v. 8, no. 7, 1966, 2092-2097

TOPIC TAGS: beryllium, plastic deformation, pressure effect, x ray study, crystal lattice structure

ABSTRACT: The authors describe x-ray structure investigations of the plastic deformation of single crystals of beryllium with different orientations. The plastic deformation was investigated with the aid of a special x-ray camera described elsewhere (Zav. lab. v. 32, 1248, 1966). The x-ray photographs of the sample could be taken both at fixed load, or directly during low-speed loading. The camera makes it possible not only to obtain x-ray photographs of the deformed substance, but also to determine the character of the deformation curve. The x-ray source was of the URS-70K type with unfiltered iron radiation. The tests were made on beryllium of technical purity (99%) with three different orientations, and are described in detail.

Card 1/2

L 04784-67

ACC NR: AP6024471

2

The x-ray pictures obtained during different stages of deformation are compared with different sections of the deformation curve and conclusions are drawn concerning the deformation mechanism of the beryllium. The results are also compared in some cases with those obtained by investigating beryllium crystals by ordinary techniques. The relative contributions of slip along the basal planes, prisms of the first kind, and twinning over the plane of the pyramid of the first kind to the deformation are evaluated for each orientation. The authors thank Yu. N. Smirnov and A. S. Izmalkov for help with the work. Orig. art. has: 2 figures

SUB CODE: 20/ SUBM DATE: 11Dec65/ ORIG REF: 003/ OTH REF: 008

Card 2/2 pla

KRUGLYKH, A.A.; MATYUSHENKO, N.N.; PAVLOV, V.S.; TIKHINSKIY, G.F.

Properties of gadolinium beryllide. Zhur. neorg. khim. 10 no.1:285-287 Ja '65. (MIRA 18:11)

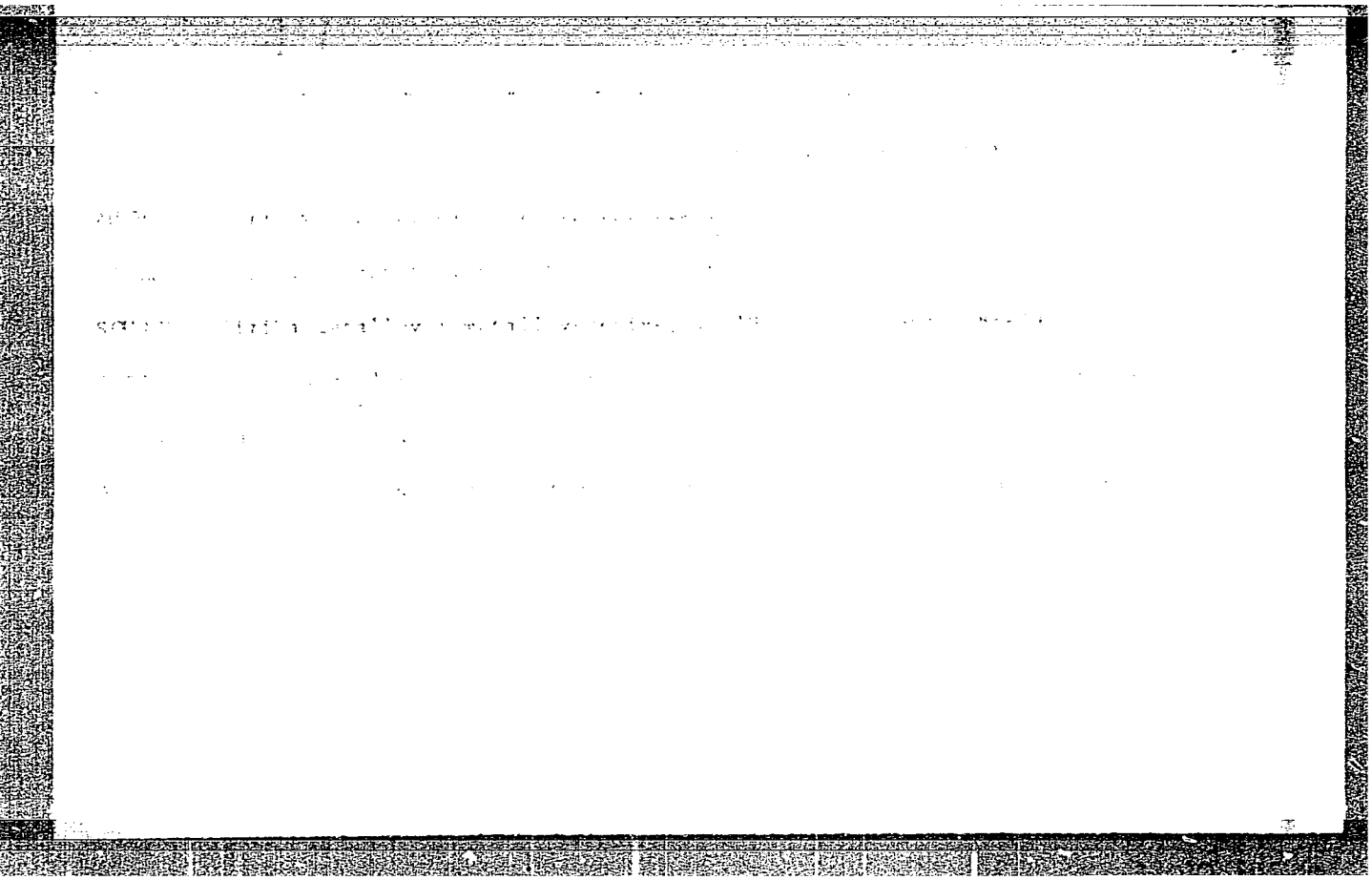
1. Fiziko-tekhnicheskiy institut AN UkrSSR. Submitted Febr. 12, 1964.

IVANOV, Viktor Yevgen'yevich; PAPIROV, Igor' Isaakovich; TIKHINSKIY, Gennadiy Filippovich; AMONENKO, Vasiliy Maksimovich

[Pure and ultrapure metals; preparation by the method of distillation in vacuum] Chistye i sverkhchistye metally; poluchenie metodom distilliatsii v vakuume. Moskva, Metallurgiia, 1965. 263 p. (MIRA 18:12)

D'YAKOV, I.G.; PAPIROV, I.I.; TIKHINSKIY, G.F.

Changes of residual resistance during the heat treatment of various purity beryllium. Fiz. met. i metalloved. 19 no.6:849-851 Je '65.
(MIRA 18:7)



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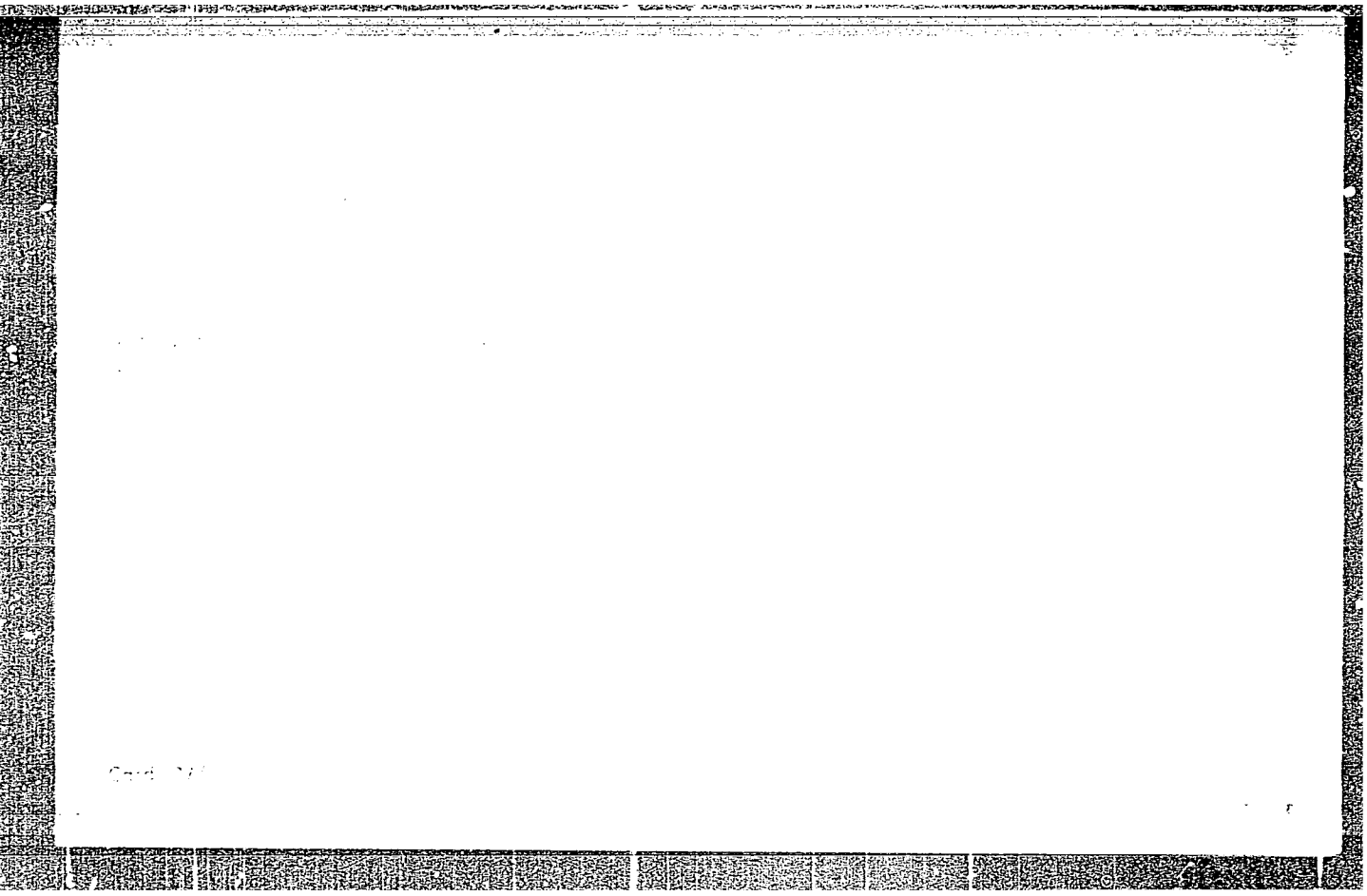

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ACCESSION NR: AP5013815

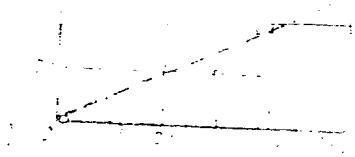
ASSOCIATION: Fiziko-tekhnicheskiy institut AN [illegible]-SSR/Physi otechnical Institute AN Ukr SSR

SUBMITTED: 07Jan64 ENCL: 01 SUB CODE: MM, EM

NO REF SOV: 000 OTHER: 000

Card 1/1

ACCESSION NR: AP5012815



Card 4/4

KRUGLYKH, A.A. [Kruhlykh, A.A.]; PAVLOV, V.S.; TIKHINSKIY, G.F. [Tykhins'kyi, H.P.]

Vapor pressure of solid yttrium. Ukr. Fiz. zhur. 9 no.2: 214-215 F'64 (MIRA 17:7)

1. Fiziko tekhnicheskiy institut AN UkrSSR, Khar'kov.

JD/HW/JG

ACCESSION NR: AP4016627

B

AUTHOR: Amonenko, V. M.; Azhazha, V. M.; Ivanov, V. Ye.; Tikhinskiy, G. F.; Finkel', V. A.

TITLE: Deformation and failure of rolled beryllium of different purity

SOURCE: Atomnaya energiya, v. 16, no. 5, 1964, 426-432

TOPIC TAGS: beryllium deformation, beryllium failure, beryllium strength, dislocation hardening, [illegible] beryllium

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ACCESSION NR: AP4036527

fected the magnitude of plastic deformation as well as the character of failure. The yield point of the high purity specimens was much lower within the investigated temperature range than that of 99.0% pure metal. Commercially pure metal was actually found to be a precipitation hardened alloy. The tendency towards lower plasticity in polycrystalline [illegible] was also substantiated by other investigators as the amount of impurities was increased. The authors emphasize [illegible]

ACCESSION NR: AP4040990 S/0279/64/000/003/0158/0160

AUTHOR: Amonenko, V.M. (Kharkov); Krugly*kh, A.A. (Kharkov); Pavlov, V.S. (Kharkov); Tikhinskiy, G.F. (Kharkov)

TITLE: Evaporation rate of components in thermal dissociation of yttrium and lanthanum berylides

SOURCE: AN SSSR. Izvestiya. Metallurgiya i gornoye delo, no. 3, 1964, 158-160

TOPIC TAGS: yttrium, yttrium beryllide, lanthanum, lanthanum beryllide, beryllide dissociation, beryllium vapor pressure, thermal dissociation

ABSTRACT: The evaporation rates of components of yttrium and lanthanum berylides during thermal dissociation of yttrium beryllide at 1040—1290C and lanthanum beryllide at 1080—1270C have been determined. YBe_{13} and $LaBe_{13}$ berylides were prepared by sintering 99.95%-pure beryllium powder with powders of 99.8%-pure yttrium or 99.4%-pure lanthanum. From the analysis of x-ray diffraction patterns, chemical analysis of the condensate, and calculated values of the vapor pressure of yttrium, beryllium, and lanthanum, it is concluded that both berylides

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PAPIROV, I.I.; TIKHINSKIY, G.F.

Thermal etching of beryllium crystals. Kristallografiia 9 no.3:444-447 My-Je '64. (MIRA 17:6)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.

ACCESSION NR: AP4034060 S/0126/64/017/004/0613/0614

AUTHORS: Papirov, I. I.; Tikhinskiy, G. F.; Finkel', V. A.

TITLE: On the problem of hardening of Be Ni alloy

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 4, 1964, 613-614

TOPIC TAGS: hardening, annealing, beryllium, nickel, radiographic apparatus RKD 57, alpha beryllium line, beta beryllium line, hypoeutectic alloy

ABSTRACT: The purpose of this work was to study the hardening process in Be-Ni alloy at high rates of cooling. Minute specimens produced by contact arc discharges were cooled on the inside walls of a copper container of 80-mm diameter, rotating at a speed of 2500 rpm. Hardening of the specimens took place over a thickness of 10 μ, with the cooling rate of 10^6 degrees/sec. Radiographic analysis was performed with an equipment of the type RKD-57. The radiogram of the hardened specimen was to be characterized by the absence of the α-Be line and the change in relative intensity of the line of the γ phase, but the absence of the α-Be line was observed only in the smallest specimens constituting about 25% of the total number. Tempering was done at temperatures of 100-400C and the exposure time at these temperatures was one hour. Radiograms of specimens tempered at temperatures

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ACCESSION NR: AP4034060

below 300C could not be distinguished from those of hardened specimens, but radiograms of specimens tempered at above 340C showed α-Be lines. Hardening of pure Be and of intermetallic compounds did not cause any change in the form of the radiogram. Experiments with hypoeutectic alloys with 5-20% Ni contained the α-Be line. Orig. art. has: 1 photograph.

ASSOCIATION: Fiziko-tekhnicheskiy institut, AN SSSR (Physico-technical Institute, AN SSSR).

SUBMITTED: 01Aug63 ENCL: 00

SUB CODE: MM NO REF SOV: 001 OTHER: 001

Card 2/2

PAPIROV, I.I.; TIKHINSKIY, G.F.

Berylium crystallization on a condensing column. *Kristallografiia* 9 no.2:310-314 Mr-Ap'64. (MIRA 17:5)

1. Khar'kovskiy fiziko-tekhnicheskiy institut.

AMONENKO, V.M.; RYABCHIKOV, L.N. [Riabchykov, L.M.]; TIKHINSKIY, G.F. [Tykhins'kyi, H.F.]

Effect of adsorbed gases on the vaporization rate of zinc and magnesium. Ukr. fiz. zhur. 9 no.1:75-80 Ja '64. (MIRA 17:3)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

AMONENKO, V.M.; IVANOV, V.Ye.; TIKHINSKIY, G.F.; FINKEL', V.A.; SHPAGIN, I.V.

High-temperature polymorphism of beryllium. Fiz. met. i metalloved. 12 no.6:865-872 D '61. (MIRA 16:11)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.

TITLE

SOURCE: Zhurnal neorganicheskoy

TOPIC TAGS: gadolinium beryllide, physical property, lattice structure, density, microhardness, dissociation, sublimation heat, vapor pressure

ABSTRACT: The following properties of GdBe determined: lattice structure--cubic with parameter a = microhardness = ~1400 kg/mm^2. This intermetallic compound dissociated appreciably above 1050C; the rate of Be evaporation was measured and the following equation was calculated for the vapor pressure of Be at 1055-1250C: